

**Amendments to the Claims:**

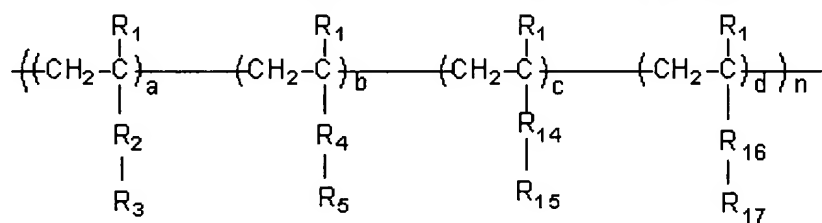
This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (canceled)

2. (canceled)

3. (currently amended) A polymer for a chemically amplified negative photoresist[[,]] comprising up to four monomer units and ~~which is~~ represented the formula:

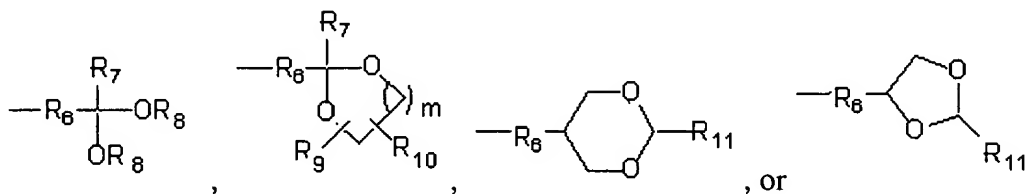


wherein each of the up to four monomer units present is different from the other monomer units present;

\_\_\_\_\_ R<sub>1</sub> is H or CH<sub>3</sub>;

R<sub>2</sub> and R<sub>4</sub> are each independently selected from (R)<sub>α</sub>(CH<sub>2</sub>)<sub>β</sub>R' and (R)<sub>α</sub>[(CH<sub>2</sub>)<sub>γ</sub>O]<sub>δ</sub>R', wherein, R is CO, CO<sub>2</sub>, O, OCO, or OCO<sub>2</sub>, R' is O, CO<sub>2</sub>, or OCO<sub>2</sub>, α is 0 or 1, β is 0 to 5, γ is 1 or 2, and δ is 1 to 5, ~~but if R and R' are both O, then β is not 0;~~

R<sub>3</sub> is represented by one of the ~~formula~~ formulae:

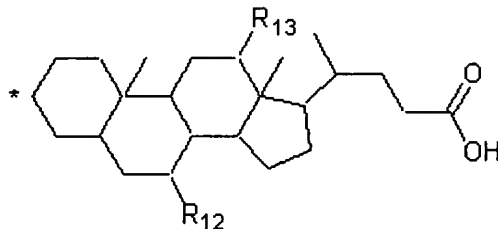


wherein R<sub>6</sub>, which combines an acetal compound and a vinyl compound, is a C<sub>1</sub>-C<sub>5</sub> saturated alkyl, a C<sub>1</sub>-C<sub>5</sub> ether, or a C<sub>1</sub>-C<sub>5</sub> carbonyl; R<sub>7</sub> to R<sub>11</sub> are each independently selected

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from H, C<sub>1</sub>-C<sub>5</sub> saturated alkyls, C<sub>1</sub>-C<sub>5</sub> ethers, C<sub>1</sub>-C<sub>5</sub> carbonyl groups, C<sub>1</sub>-C<sub>5</sub> alcohol groups; and m is a number ranging from 1-5; and

R<sub>5</sub> is represented by formula:



wherein R<sub>12</sub> and R<sub>13</sub> are each independently selected from H and OH, and \* represents the bonding site at which the R<sub>4</sub> group is bonded;

R<sub>14</sub> and R<sub>16</sub> are each independently selected from a single bond, (R)<sub>α</sub>(CH<sub>2</sub>)<sub>β</sub>R' and (R)<sub>α</sub>[(CH<sub>2</sub>)<sub>γ</sub>O]<sub>δ</sub>R', wherein R is CO, CO<sub>2</sub>, O, OCO, or OCO<sub>2</sub>, R' is O, CO<sub>2</sub>, or OCO<sub>2</sub>, α is 0 or 1, β is 0 to 5, γ is 1 or 2, and δ is 1 to 5, ~~but if R and R' are both O, then β is not 0;~~

R<sub>15</sub> is a hydroxyl group;

R<sub>17</sub> is a carboxyl group;

a, b, c, and d represent mole ratios of each monomer, a has a value of 0-0.5, b has a value of 0-0.9, c has a value of 0-0.3, and d has a value of 0-0.3, provided that a+b+c+d = 1; and

n represents the degree of polymerization of each polymer, and has a value of at least 2.

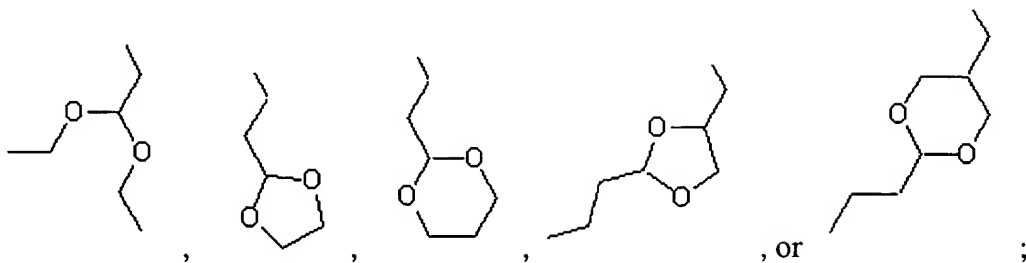
4. (original) The polymer for a chemically amplified negative photoresist according to claim 3 wherein:

R<sub>1</sub> is H;

R<sub>2</sub> is CO<sub>2</sub>;

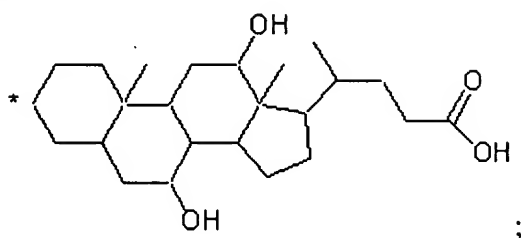
R<sub>3</sub> is

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R<sub>4</sub> is CO<sub>2</sub>;

R<sub>5</sub> is



R<sub>14</sub> is CO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>,

R<sub>15</sub> is OH,

R<sub>16</sub> is a single bond, and

R<sub>17</sub> is COOH.

5. (canceled)

6. (canceled)

7. (canceled)

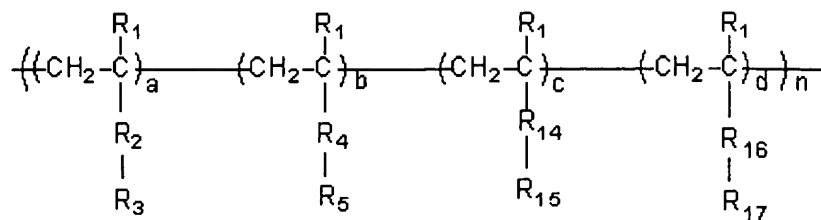
8. (canceled)

9. (currently amended) A chemically amplified negative photoresist composition comprising;

a photoacid generator; and

a polymer comprising up to four monomer units of the formula:

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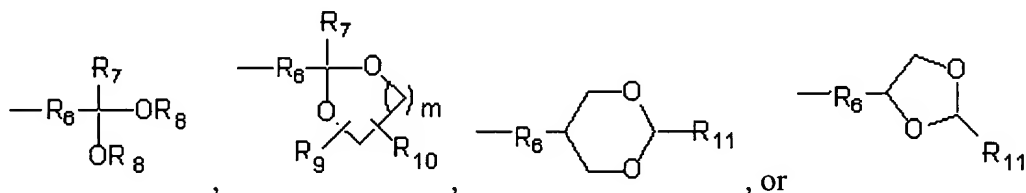


wherein each of the up to four monomer units present is different from the other monomer units present;

\_\_\_\_\_ R<sub>1</sub> is H or CH<sub>3</sub>;

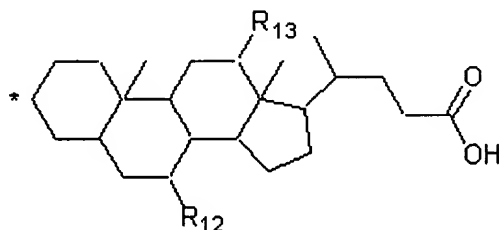
R<sub>2</sub> and R<sub>4</sub> are each independently selected from (R)<sub>α</sub>(CH<sub>2</sub>)<sub>β</sub>R' and (R)<sub>α</sub>[(CH<sub>2</sub>)<sub>γ</sub>O]<sub>δ</sub>R', wherein, R is CO, CO<sub>2</sub>, O, OCO, or OCO<sub>2</sub>, R' is O, CO<sub>2</sub>, or OCO<sub>2</sub>, α is 0 or 1, β is 0 to 5, γ is 1 or 2, and δ is 1 to 5, ~~but if R and R' are both O, then β is not 0;~~

R<sub>3</sub> is represented by one of the ~~formula~~ formulae:



wherein R<sub>6</sub>, which combines an acetal compound and a vinyl compound, is a C<sub>1</sub>-C<sub>5</sub> saturated alkyl, a C<sub>1</sub>-C<sub>5</sub> ether, or a C<sub>1</sub>-C<sub>5</sub> carbonyl; R<sub>7</sub> to R<sub>11</sub> are each independently selected from H, C<sub>1</sub>-C<sub>5</sub> saturated alkyls, C<sub>1</sub>-C<sub>5</sub> ethers, C<sub>1</sub>-C<sub>5</sub> carbonyl groups, and C<sub>1</sub>-C<sub>5</sub> alcohol groups; and m is a number ranging from 1-5; and

R<sub>5</sub> is represented by the formula:



wherein R<sub>12</sub> and R<sub>13</sub> are each independently H or OH; and

\* represents the bonding site at which the R<sub>4</sub> group is bonded;

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$R_{14}$  and  $R_{16}$  are each independently selected from a single bond,  $(R)_\alpha(CH_2)_\beta R'$  and  $(R)_\alpha[(CH_2)_\gamma O]_\delta R'$ , wherein R is CO, CO<sub>2</sub>, O, OCO, or OCO<sub>2</sub>, R' is O, CO<sub>2</sub>, or OCO<sub>2</sub>,  $\alpha$  is 0 or 1,  $\beta$  is 0 to 5,  $\gamma$  is 1 or 2, and  $\delta$  is 1 to 5, ~~but if R and R' are both O, then  $\beta$  is not 0;~~

$R_{15}$  is a hydroxyl group;

$R_{17}$  is a carboxyl group;

a, b, c, and d represent the mole ratios of each monomer, wherein a has a value of 0-0.5, b has a value of 0-0.9, c has a value of 0-0.3, and d has a value of 0-0.3, provided that  $a+b+c+d = 1$ ; and

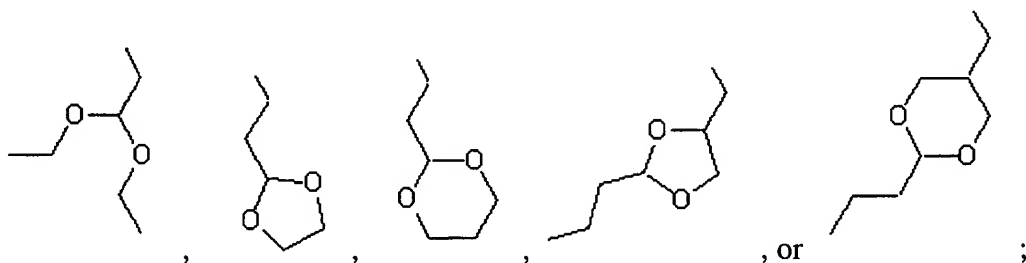
n represents the degree of polymerization of each polymer, and has a value of at least 2.

10. (original) The chemically amplified negative photoresist composition according to claim 9 wherein

$R_1$  is H;

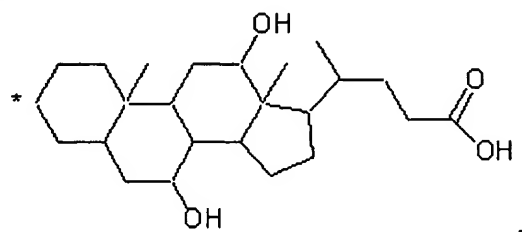
$R_2$  is CO<sub>2</sub>;

$R_3$  is



$R_4$  is CO<sub>2</sub>;

$R_5$  is



$R_{14}$  is CO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>,

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R<sub>15</sub> is OH,

R<sub>16</sub> is a single bond, and

R<sub>17</sub> is COOH.

11. (original) The chemically amplified negative photoresist composition according to claim 9 wherein the photoresist composition comprises 10 to 20 wt.% of said polymer and 0.1 to 1.0 wt.% of said photoacid generator.